PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 : E05D 5/00, 5/02

A1

(11) International Publication Number: WO 90/06413

(43) International Publication Date: 14 June 1990 (14.06.90)

(21) International Application Number: PCT/NO89/00124

(22) International Filing Date: 1 December 1989 (01.12.89)

(30) Priority data:
885393 2 December 1988 (02.12.88) NO

(71) Applicant *(for all designated States except US)*: A/S GRORUD JERNVAREFABRIK [NO/NO]; Ø. Aker vei 243, N-0976 Oslo 9 (NO).

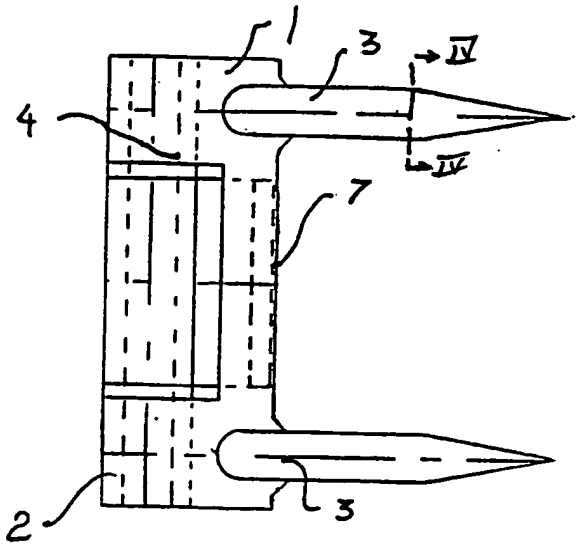
(72) Inventor; and
(75) Inventor/Applicant *(for US only)* : FRIES, Bror [SE/SE]; Linghult 2, S-310 21 Hishult (SE).

(74) Agent: GULBRANDSEN, Kjell; Bryns Patentkontor A/S, P.O. Box 9566, Egertorget, N-0128 Oslo 1 (NO).

(81) Designated States: AT, AT (European patent), AU, BB, BE (European patent), BF (OAPI patent), BG, BJ (OAPI patent), BR, CF (OAPI patent), CG (OAPI patent), CH, CH (European patent), CM (OAPI patent), DE, DE (European patent), DK, ES (European patent), FI, FR (European patent), GA (OAPI patent), GB, GB (European patent), HU, IT (European patent), JP, KP, KR, LK, LU, LU (European patent), MC, MG, ML (OAPI patent), MR (OAPI patent), MW, NL, NL (European patent), NO, RO, SD, SE, SE (European patent), SN (OAPI patent), SU, TD (OAPI patent), TG (OAPI patent), US.

Published
With international search report.
In English translation (filed in Norwegian).

(54) Title: IMPROVEMENT IN HINGE LEAVES



(57) Abstract

A hinge leave (1) for a door hinge is provided with at least two prongs (3), each having a curved form and a sharp point. The prongs (3) are driven into a door in prebored holes, whereby the curved form of the prongs (3) will provide for a good guiding during the driving in and a good holding in the door. An edge (7) on the hinge leave (1) between a pair of prongs (3) will abut the door material when the driving in is properly done.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	ES	Spain	MG	Madagascar
AU	Australia	FI	Finland	ML	Mali
BB	Barbados	FR	France	MR	Mauritania
BE	Belgium	GA	Gabon	MW	Malawi
BF	Burkina Faso	GB	United Kingdom	NL	Netherlands
BG	Bulgaria	HU	Hungary	NO	Norway
BJ	Benin	IT	Italy	RO	Romania
BR	Brazil	JP	Japan	SD	Sudan
CA	Canada	KP	Democratic People's Republic of Korea	SE	Sweden
CF	Central African Republic			SN	Senegal
CG	Congo	KR	Republic of Korea	SU	Soviet Union
CH	Switzerland	LI	Liechtenstein	TD	Chad
CM	Cameroon	LK	Sri Lanka	TG	Togo
DE	Germany, Federal Republic of	LU	Luxembourg	US	United States of America
DK	Denmark	MC	Monaco		

IMPROVEMENT IN HINGE LEAVES.

The present invention concerns an improvement in hinge leaves for the hinge having two leaves.

Hinges, for instance for doors, have had many different and more or less successful forms. One type of hinges, so called driving in hinges, has a peg or prong adapted to be driven into a prebored hole in one of the two parts which are to be hinged together by means of the hinge. The peg or prong can have round or square cross section. The square profile type has mostly been used for forged hinges for relatively large constructions such as gates and the like. A round profile for the prong is used in hinges adapted for smaller and more accurate structures. A drawback of the latter is, however, that the round pegs or prongs do have screw threads or circumferential rills which shall provide for a good holding in the wood work in the part which is to be hinged. Provided the peg or prong is not driven accurately axially into the bored hole the threads or rills will, during the driving in cut its own hole, which in that case will be misaligned relative the already bored and assumingly correct placed hole.

Known hinges of this type are difficult to drive into correct depth and they are also expensive in manufacture.

The object of the present invention is to provide for an improvement in hinge leaves, thereby obtaining the same advantages as known from the known driving in hinges and without any of the associated drawbacks.

This object is according to the invention reached in that the hinge leave is stamped out together with the prongs from one and the same working piece. The prongs is stamped to a curved form, thereby providing for a good contact between the prongs and the bored hole during the driving in of the prongs, as explained in the following.

The curved form can represent a small part of a full circle and also sharp points of the prongs are adapted to guide the prongs during the driving in. An edge on the hinge leave between pair of prongs will abute for instance a door edge when the leave is driven in and will stop further driving in of the hinge leave. Thereby the hinge leave will be placed in a correct position, that is that a correct driving in depth is achieved.

Characterizing features of the invention are found in the claims and the invention will be explained further in the following with specific reference to the drawings wherein

Figure 1 discloses a hinge leave according to the invention, viewed from the side,
Figure 2 discloses a hinge having a hinge leave according to the invention and a hinge leave of prior known form,
Figure 3 discloses the hinge viewed from an edge, and
Figure 4 discloses a view through a prong along the line IV-IV in Figure 1.

The hinge leave 1 in Figure 1 has in the diclosed form a known hinge barrel 2. The leave is stamped out of a working piece having a thickness of 2.8 mm. Prongs 3 adapted to be driven into prebored holes in a door are stamped out simultaneously with the stamping out of the part of the hinge leave 1 which shall form the barrel 2. The prongs 3 are as disclosed in Figure 1 parallel to each other and are preferably extending perpendicularly on the swinging axis 4 of the hinge. The prongs 3 are stamped to a curved form as disclosed in Figure 4. A part of the curve form of the prongs 3 is also disclosed in Figure 3. This goes also for Figure 2 which in addition to the curved form also shows the sharp pointing of a prong 3 at 5. This pointing is of special importance during the driving in, because the prong 3 having a such form will be driven into contact along the

walls of the bored hole and obtain a close abutment here wihtout being harmed or destroyed in any way.

The Figures 2 and 3 discloses the second hinge leave 6 which in this example is of the snap-in type.

The hinge leave edge 7 between the prongs 3 is such placed that when it during the driving in of the hinge will abute the door material the prong 3 will have been driven in exactly as far as wanted, that is the hinge will have the correct position on the door. The disclosed hinge leave has two prongs, but it may of course within the frame work of the invention be possible to use for instance three prongs or eventually more, dependent on the wanted support capacity for the hinge.

Patent Claims.

1.
Improvement in a hinge leave, especially in a door hinge, characterized in that the leave (1) for securing on a door has at least two outwardly extending prongs (3) which are stamped with a curve form out of the same working piece as the hinge leave.

2.
Improvement as in claim 1,
characterized in that the cross section of a prong is only a minor part of a circle.

3.
Improvement as in claim 1 and 2,
characterized in that sharp edges towards the points of the prongs (3) are adapted to guide the prongs (3) during the driving in.

4.
Improvement as in any of the preceding claims,
characterized in that an edge (7) of the hinge leave (1) between pair of prongs (3), forms an abutment between hinge leave (1) and a door, thereby defining the correct driving in depth.

1/1

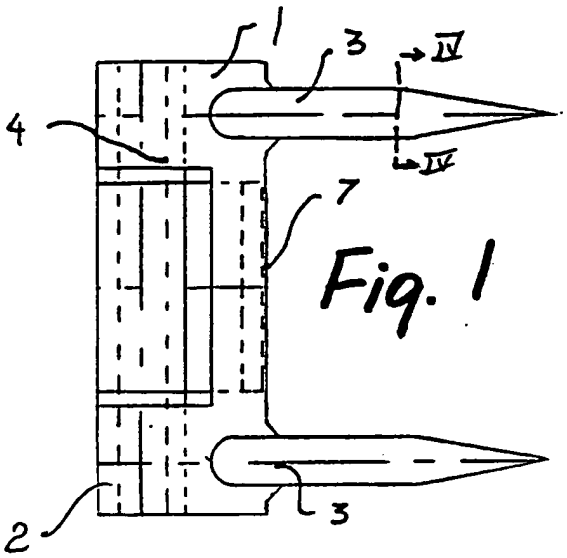


Fig. 1

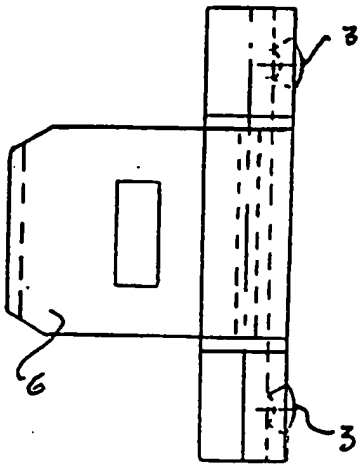


Fig. 3

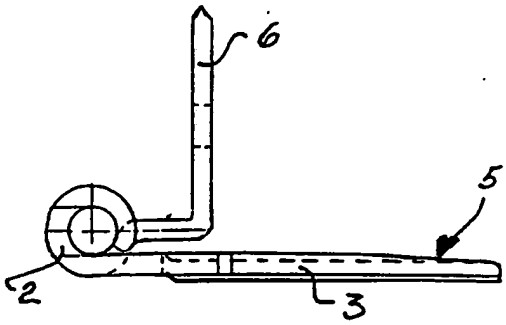


Fig. 2

Fig. 4

INTERNATIONAL SEARCH REPORT

International Application No PCT/NO 89/00124

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [6]

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC5: E 05 D 5/00, /02

II. FIELDS SEARCHED

Minimum Documentation Searched [7]

Classification System [8]	Classification Symbols
IPC5	E 05 D

Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched [9]

SE,DK,FI,NO classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

Category *	Citation of Document, [11] with indication, where appropriate, of the relevant passages [12]	Relevant to Claim No. [13]
X	FR, A, 2386678 (BUTPLATE LIMITED) 3 November 1978, see page 8, line 17 - line 20 --	1-4
X	CH, A, 309864 (JULES BACON) 1 December 1955, see the whole document --	1-4
X	US, A, 2188670 (R.S. WAGNER) 30 January 1940, see the whole document --	1-4
	--------	

* Special categories of cited documents: [10]

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
14th February 1990	1990 -02- 21
International Searching Authority	**Signature of Authorized Officer**
SWEDISH PATENT OFFICE	Christer Wendenius

Form PCT/ISA/210 (second sheet) (January 1985)

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON INTERNATIONAL PATENT APPLICATION NO. PCT/NO 89/00124

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR-A- 2386678	03/11/78	NL-A- 7803512	09/10/78
		GB-A- 1590411	03/06/81
CH-A- 309864	01/12/55	NONE	
US-A- 2188670	30/01/40	NONE	

PUB-NO: WO009006413A1

DOCUMENT-IDENTIFIER: WO 9006413 A1

TITLE: IMPROVEMENT IN HINGE LEAVES

PUBN-DATE: June 14, 1990

INVENTOR-INFORMATION:

NAME	COUNTRY
FRIES, BROR	SE

ASSIGNEE-INFORMATION:

NAME	COUNTRY
GRORUD JERNVAREFAB AS	NO

APPL-NO: NO08900124

APPL-DATE: December 1, 1989

PRIORITY-DATA: NO00885393A (December 2, 1988)

INT-CL (IPC): E05D005/00, E05D005/02

EUR-CL (EPC): E05D005/02

US-CL-CURRENT: 16/384, 16/387

ABSTRACT:

CHG DATE=19990617 STATUS=O>A hinge leave (1) for a door hinge is provided with at least two prongs (3), each having a curved form and a sharp point. The prongs (3) are driven into a door in prebored holes, whereby the curved form of the prongs (3) will provide for a good guiding during the driving in and a good holding in the door. An edge (7) on the hinge leave (1) between a pair of prongs (3) will abut the door material when the driving in is properly done.